FACT SHEET

MAY 2000

NEPA Call-In

"Designed to meet the NEPA compliance needs of GSA's realty professionals"

The Clean Air Act

Introduction

The origin of the Clean Air Act (CAA) can be traced to tragic beginnings in the Pennsylvania mill town of Donora, 28 miles south of Pittsburgh. On October 28, 1948, sulfur dioxide emissions from a local zinc factory combined with a heavy, stationary fog to form a sulfuric acid mist. By the time the fog dissipated three days later, 17 people had died from inhalation of the deadly mix, and 6,000 more were temporarily stricken with respiratory problems, headaches, abdominal pains or nausea. The environmental tragedy in Donora, along with similar disasters, eventually led Senator Edmund Muskie of Maine to hold congressional hearings that led to the adoption of the Clean Air Act (42 U.S.C. 7401) in 1970.

Air pollution, fueled by rapid global industrial expansion, has created one of the greatest environmental challenges of the last 100 years. The passage of the CAA was a benchmark in environmental regulation, establishing emission limits for both existing and new pollution sources, setting emission standards for hazardous air pollution, and mandating the end of the production of certain ozone-depleting substances.

In 1990, the CAA was substantially amended to address acid rain, urban air pollution, toxic air emissions, and the accidental release of chemicals. The 1990 amendments substantially increased the authority of the U. S. Environmental Protection Agency (EPA) to enforce the CAA, and instituted a permitting program to improve compliance. This fact sheet will summarize the major aspects of the CAA and the 1990 amendments, outline GSA's responsibilities under the CAA, and discuss how to incorporate CAA requirements into NEPA documents.

What's Inside . . .

Clean Air Standards and Control Measures

Several clean air standards and control measures have been implemented by the EPA as a result of the CAA. These include the National Ambient Air Quality Standards (NAAQS), the National Emission Standards for Hazardous Air Pollutants (NESHAPs), the New Source Performance Standards (NSPS), and Automobile Emission Standards. In addition, the CAA includes specific provisions for reduction of acid pollutants (acid rain) and protection of the ozone layer.

National Ambient Air Quality Standards (NAAQS)

These standards are applicable to total pollutant concentrations in the air (ambient air) and do not apply to individual emission sources. They establish maximum primary and secondary ambient concentrations (standards) for six criteria air pollutants: carbon monoxide, lead, nitrogen dioxide, ozone, sulfur dioxide, and very fine dust called "particulate matter" (40 CFR Part 50). The primary standards are uniform across the country, set with a margin of safety for those most vulnerable to air pollution (such as children and the elderly), and established without regard to the costs or feasibility of attainment. The secondary standards are more general, and are intended to prevent damage to soils, crops, vegetation, water, weather, visibility, and property. EPA established Air Quality Control Regions (AQCR) to bring the regions into compliance with the NAAQS. Each AQCR is

subdivided into attainment and nonattainment areas. Attainment areas are regions where one or more of the NAAQS pollutants are meeting standards, while nonattainment areas are locations in which at least one of the NAAQS is not being achieved. It is possible under this definition, for example, for an area to be within the standards of attainment for carbon monoxide and lead, while at the same time being in nonattainment for other criteria pollutants.

Federal activities that construct or modify stationary sources that emit air pollutants are subject to preconstruction review, emission control systems, and monitoring to maintain the NAAQS in a given area. These provisions are intended for the Prevention of Significant Deterioration (PSD) of air quality and are specific for each state (40 CFR Part 51.166). Electric power generating plants, research and development facilities, or facilities with incinerators, generators, boilers, hazardous material storage sites, or refueling stations are likely sources of air pollution which may be constructed or managed by GSA.

National Emission Standards for Hazardous Air Pollutants (NESHAPs)

NESHAPs are established for hazardous air pollutants (HAPs) or air toxics that are not regulated under NAAQS, but which have been shown to cause adverse effects to human health or adverse effects on the environment (CAA Section 112). Unlike NAAQS, NESHAPs apply to specific sources: all facilities emitting regulated pollutants must meet the appropriate NESHAPs standard. NESHAPs define emission limits, monitoring requirements, restrictions on material use, worker practice standards, and reporting requirements for HAPs.

In 1970, EPA issued NESHAPs for seven substances: asbestos, benzene, beryllium, inorganic arsenic, mercury, radionuclides, and vinyl chloride (40 CFR Part 61). With the 1990 CAA amendments (Section 112), the emission standards were increased to include 189 HAPs. In addition, EPA produced a list of High Risk Pollutants for regulation (40 CFR Part 63.74, Table 1). With the exception of substances such as asbestos (a common type of insulation in older buildings) and benzene (utilized in common laboratory solvents and gasoline), the majority of pollutants described in the EPA regulations are probably of minor concern to GSA, however, facility managers should be familiar with these pollutants, particularly in facilities which may utilize or emit potentially hazardous substances, such as laboratories.

New Source Performance Standards (NSPS)

Under the 1990 CAA amendments, EPA has established NSPS for more than 60 specific source categories of new, modified, or reconstructed stationary sources of HAPs. A stationary source is defined as "any building, structure, facility or installation that emits or may emit any air pollution." NSPS are applicable nationwide, independent of location. Because the regulated pollutants in this case are the same as those regulated by the NAAQS, NSPS are based on the application of the Best Available Control Technology (BACT) to reduce emissions. NSPS standards include requirements for notification, record keeping, performance tests, maintenance, and monitoring (Subpart I of 40 CFR Part 51, 40 CFR Part 60). The NSPS, as well as emissions guidelines and compliance periods for a variety of stationary sources, are provided in the regulations, and owners and operators of these sources are responsible for compliance with these requirements, which are applicable to facilities constructed after certain dates (stated in the regulations). While most of these facilities are manufacturing plants, refineries, or smelting operations, some categories of stationary sources, such as bulk gasoline storage terminals, incinerators (including hospital/medical/infectious waste incinerators), or fossil-fuel steam generators (boilers), may be applicable to GSA or its tenants.

Automobile Emissions Standards

Mobile sources, particularly automobiles, generate the most significant amount of air pollution. Although automobiles now produce 60-80% less pollution than those built in the 1960's, the increased number of cars and total miles driven through increased commuting distances, as well as an increase in the release of volatile organic chemicals (VOCs) resulting from the use of unleaded gasoline resulting in autos still having a significant impact on air quality. Today's cars and trucks:

- Produce 50% of the VOCs and nitrogen dioxide released to the air;
- Generate more than 50% of the HAPs; and
- Release up to 90% of carbon monoxide found in urban air.

The 1990 CAA amendments tightened the motor vehicle emission standards originally introduced in the 1970 regulations. These changes were intended to reduce tailpipe emissions of hydrocarbons, carbon monoxide, and nitrogen oxides (NO_x), and to reduce vehicle emissions from the evaporation of gasoline during refueling. The 1990 amendments also introduced programs for cleaner fuels and cleaner vehicles.

Scheduled improvements in fuel quality include changes in the refining process for diesel fuels to reduce the level of sulfur, and reformulating gasoline to contain less VOCs. The 1990 amendments also encourage the development of alternative fuels including alcohols, liquefied petroleum gas, natural gas, and electricity, as well as the development of new vehicles utilizing these fuels (see Executive Order 13031, which gives GSA a key role in this development). In May 1999, the EPA proposed new emission limits for the automobile industry, and new sulfur content limits for the fuels industry aimed at reducing ozone pollution and lowering emissions of particulate matter.

Other Control Measures under the 1990 CAA Amendments

The 1990 CAA amendments also address the issues of acid rain and ozone depletion. Standards for Acid Rain Reduction are targeted at power plants, and seek to significantly reduce the levels of sulfur dioxide and nitrogen oxides which combine

with moist air to form sulfuric acid and nitric acid. These pollutants are typically transported eastward from large coal-burning power plants in the Midwest, and fall to earth as acid rain, snow, mist or solid particles. The depletion of stratospheric ozone is considered to have a detrimental effect on global climate and human health. Measures to phase out the production of ozone depleting substances, such as chlorinated fluorocarbons, and the creation of the Significant New Alternatives Policy (SNAP), which attempts to identify and promote substitutes for ozone-depleting substances, were also included in the 1990 amendments.

CAA Risk Management Program

The 1990 CAA amendments provided for a Clean Air Risk Management Program under Section 112(r) to address the dangers of hazardous chemicals accidentally released into the air. The regulations, found in Title 40 CFR Part 68, require owners and operators of stationary sources that have more than a threshold quantity of a regulated substance in a given process to develop and implement a Risk Management Program by June 21, 1999. EPA estimates that this requirement will affect more than 60,000 sources.

Within the Risk Management Program, a production process is covered under one of three program levels depending on the risk posed by the potential release of regulated substances from each covered process. Program Level 1 covers processes of least concern, and program Level 3 covers those of highest concern (although a stationary source could have covered processes in one or more of the program levels). Each program level has five major elements: Management System, Hazard Assessment, Prevention Programs, Emergency Response Program, and the final Risk Management Program (RMP). Facilities in any of the three program levels are required to perform a Hazard Assessment and compile an RMP. A Prevention Program and Emergency Response Program are only required for facilities in Levels 2 and 3.

Regulatory Procedures

State Responsibility

Under the CAA, state and local governments are responsible for reducing and eliminating pollutants at their source. States are encouraged to use Federal financial and technical assistance to create implementation plans to achieve NAAQS. The NESHAPs program may also be delegated to any qualifying states. State authorization is described in 41 CFR Part 52, and requires EPA review and approval of State Implementation Plans (SIP). Although EPA sets the minimum requirements for achieving acceptable air quality, the actual implementation of the regulations is the responsibility of the states. Each SIP is a collection of regulations that the state will use to clean up polluted areas. The state regulations are required to be at least as stringent as the Federal regulations.

Nationwide Permit Program

To ensure the compliance of each state's SIP, the CAA provides for a comprehensive nationwide air emission operating permit program. The provisions for operating permits are to be administered by states and air quality management districts (AQMD). The permits are designed for facilities operating, modifying, or demolishing new or existing stationary sources emitting HAPs, or constructing new sources. These facilities must identify activities requiring permits, apply for those permits, operate the regulated sources in compliance with the permit limits, and periodically renew permits as required by Federal, State, or local air pollution control agencies (40 CFR Parts 61.07 & 61.08). Applicants for permits to operate and/or construct air pollution emission sources are required to provide assurances that the existing or proposed sources will not degrade ambient air quality. The permits identify pollutants emitted by the source, specify enforceable emission limits, contain particular compliance schedules, explain emission monitoring and reporting requirements, and include any other pertinent information. A minimum fee of $25 per ton of pollutant is recommended under this program.

Air Toxic Program

Each state must also develop an Air Toxic Program separate from the NAAQS, NESHAPs, and NSPS programs. States issue regulations under the air toxic programs in accordance with EPA guidelines. The EPA guidelines are only recommendations, and as a result the state and local air toxic regulations and guidelines vary greatly. Federal facilities must comply with the state programs with regard to emissions from stationary and mobile sources. In order to attain and maintain appropriate air quality, it is important for owners and operators to know the volume and concentration of emitted pollutants: this information can be obtained by monitoring (continuously or by sampling) HAPs, chloroflourocarbons, and halons, or testing new stationary sources and emissions testing for HAPs. The information obtained from surveillance of air pollution sources identifies deficiencies in systems and indicates where maintenance is needed. Maintenance requirements for stationary sources of air emissions and monitoring devices are addressed in the CAA regulations (40 CFR Part 60).

Reporting and Recordkeeping

Owners and operators of air pollution sources must comply with reporting and recordkeeping requirements and notify the EPA of any physical or operational changes to the facility which will increase the emission rate of any air pollutant (40 CFR Parts 60.7 and 61.09). The 1990 CAA amendments require states to give notice of a permit application to the EPA, the public, and to each contiguous state where air quality may be affected and to each state within 50 miles of the source (40 CFR Part 70). These reporting requirements are applicable to GSA facilities which can be identified as stationary sources, such as research and development facilities, incinerators, bulk gasoline terminals, or fossil fuel-fired steam generators (boilers).

Source Categories for National Air Toxic Pollutants	
Major Sources	Industrial sources such as chemical plants, paper mills, and power plants. Release of pollutants primarily through emission stacks. EPA estimates that major sources emit about 24% of all man-made air toxics nationwide.
Area Sources	Dry cleaners, gasoline stations, auto body shops, home furnaces, or wood stoves. Also includes household products such as paints, solvents, adhesives, and pesticides. Area sources emit about 35% of all man-made toxics nationwide.
Mobile Sources	Motor vehicles such as cars, trucks, buses, airplanes, motorboats, etc. Mobile sources cause about 41% of man-made air toxics.
Natural Sources	Some toxics originate from natural sources such as forest fires, volcanoes, and the ground.

Adapted from: "Toxic Pollutants of an Industrialized Nation," *MD Environment* (October 1999)

Federal Agency Requirements

Clean Air Act Sections 118 and 176

Sections 118 and 176 of the CAA specify Federal agency requirements. Section 118 waives Federal immunity from compliance with the CAA, stating that each Federal department or agency, and each officer, agent, or employee thereof, shall be subject to and comply with all Federal, State, interstate, and local requirements regarding the control and abatement of air pollution in the same manner, and to the same extent as any non-governmental entity (CAA Section 118(a)). This provision is applicable if the Federal facility:

- Has jurisdiction over any property or facility; or
- Engages in any activity that results or may result in the discharge of air pollutants.

Section 176 prohibits any Federal department, agency, or instrumentality of the Federal government from engaging in any activity that does not conform to an implementation plan after it has been approved or promulgated (see "The CAA in GSA's NEPA Compliance Process").

Under Section 118, the President may exempt any emission source of any Federal department or agency if he determines it to be in the paramount interest of the United States. This exemption does not apply to standards of performance for new stationary sources (CAA Section 111). In addition, exemptions for any stationary sources from compliance with any standard or limitation under CAA Section 112 are limited to a period of not more than two years if the President determines that the technology to implement such standards is not available (CAA Section 112 (i)(4)).

Executive Orders

The following Executive Orders also pertain to Federal responsibility under the CAA:

Executive Order 12088, "Federal Compliance with Pollution Control Standards," gives the head of each Executive agency responsibility for ensuring that all necessary actions are taken for the prevention, control, and abatement of environmental pollution with respect to Federal facilities and activities under the control of the agency. Each agency is required to submit to the Director of the Office of Management and Budget, through the EPA, an annual plan for the control of environmental pollution which provides for any necessary improvement in the design, construction, management, operation, and maintenance of Federal facilities and activities.

Executive Order 12759, "Federal Emergency Management," gives required energy efficiency goals for Federal facilities. These goals include minimization of petroleum use in Federal facilities, vehicle fuel efficiency outreach programs, and Federal vehicle fuel efficiency. Only Sections 3, 9, and 10 of this EO remain in effect, the remainder having been revoked by EO 12902.

Executive Order 12843, "Procurement Requirements and Policies for Federal Agencies for Ozone-Depleting Substances,"

requires Federal agencies to conform their procurement practices and regulations to the policies and requirements of the CAA which deal with stratospheric ozone protection, and gives preference to the procurement of alternate products.

Executive Order 12902, "Energy Efficiency and Water Conservation at Federal Facilities," prescribes energy efficiency goals for all Federal Facilities and includes water conservation initiatives. Each agency is required to develop and implement a program to reduce energy consumption by 30% by the year 2005, based on the agency's 1985 energy use.

Executive Order 13031, "Federal Alternative Fueled Vehicle Leadership," requires Federal agencies to increase the number of AFVs being acquired to 75% by fiscal year 1999. This EO also designates the GSA to provide planning information to potential AFV suppliers to assist in production planning and to provide Federal agencies with information on the production plans of AFV suppliers.

The CAA in GSA's NEPA Compliance Process

The Council on Environmental Quality suggests Federal agencies should incorporate pollution prevention considerations early in the planning and decision making processes for their actions, and should document those considerations in the Environmental Assessment (EA) or Environmental Impact Statement (EIS) prepared for those actions. For example, if the proposed action will result in any generation of air emissions, then the environmental documentation should provide a detailed characterization of those emissions, the rate and effects of the emissions, the results of air dispersion modeling (if any), and a discussion of measures proposed to reduce such emissions.

GSA must consider what effect a development action may have on the NAAQS as a result of both short-term increases in air pollution during construction and long term increases from traffic pattern changes. As a Federal agency, GSA is required to conform to any SIP that could be impacted by the agency actions. The CAA prohibits Federal agencies from supporting, financing, permitting, or approving any activity which does not conform to a SIP. It is therefore necessary that GSA include a conformity determination as a component of any NEPA analysis conducted on proposed actions where there is a potential for impacts to air quality.

In evaluating CAA compliance of a proposed action, the potential short- and long-term effects to air quality will need to be evaluated against the baseline (present) data, which may be obtained from the State Air Quality Department or equivalent agency. This is accomplished through "air dispersion" models such as the EPA Industrial Source Complex Short Term (ISCST) model and the EPA Rough Terrain Diffusion Model (RTDM). In addition to these EPA tools, other Federal agencies, such as the U. S. Department of Transportation and the U. S. Department of Energy have created their own models.

It may be necessary for GSA to coordinate with and, where applicable, obtain permits from Federal, State, regional, and local air quality regulatory bodies. GSA may be required to establish and implement pollution prevention plans for actions located in "nonattainment" areas (areas which have not met EPA standards for reducing pollutants).

Although few GSA facilities may emit significant amounts of pollutants, it is important to consider that facility construction may cause an increase in air pollution as a result of changing traffic patterns and higher volume of vehicles traveling to and from the facility. These considerations are appropriate in completing a Checklist CATEX, in which the analyst is required to evaluate the proposed action for consistency with the CAA or the SIP. Under the PBS NEPA Desk Guide, Section 7.4, an EIS is required for a proposed acquisition of space, or the expansion or improvement of an existing facility, when "the proposed use will substantially increase the number of motor vehicles at the facility." Awareness of GSA's responsibilities under the CAA and familiarity with EPA requirements and the provisions of the pertinent SIP can help identify and address potential air pollution issues early in the NEPA process.

Cumulative Exposure to Air Toxics

In 1994, the EPA began the Cumulative Exposure Project to develop estimates of air toxics concentration for every area of the contiguous United States, and to assess the potential for adverse health risks from exposure to ambient concentrations of air toxics. The Cumulative Exposure Project reported:

- The presence of air toxics was found in every census tract in the continental United States. Census tracts are geographical areas that vary in size, but generally contain 4,000 to 5,000 people.
- More than half of the estimated cancer risk from all toxics come from mobile sources such as cars, trucks, airplanes, etc.
- Significant contributions of air toxics come from small sources and from background concentrations. Background concentrations are attributable to natural sources, global transport of pollutants from other countries, and the resuspension of past man-made emissions.

For More Information

For more information about the Clean Act Act and NEPA compliance, please contact NEPA Call-In at (202) 208-6228.

References

Associated Press, "When Fog Turned Deadly," October 28, 1998.

Bregman, Jacob I., *Environmental Impact Statements*, Second Edition, 1999.

U. S. Environmental Protection Agency, "The Plain English Guide to the Clean Air Act," April 1993.

U. S. Environmental Protection Agency, "Risk Management Programs Under the Clean Air Act Section 112 (r), Guidance for Implementing Agencies," February 1998.

GSA Environmental Book (E-Book).

Maddox, Bob, "Toxic Pollutants of an Industrialized Nation," *MD Environment*, October 1999.

NEPA Call-In Technical Inquiry 0065, "GSA Compliance with SIPs."

PBS NEPA Desk Guide, Final Guidance, October 1999.

NEPA Call-In is GSA's National Environmental Policy Act (NEPA) information clearinghouse and research service. NEPA Call-In is designed to meet the NEPA compliance needs of GSA's realty professionals.

recycled paper

TI 0334 – May 2000

Need more information?
Call NEPA Call-In at (202) 208-6228
www.gsa.gov/pbs/pt/call-in/nepa.htm